L 40080-66 EWP(e)/EWT(m)/EWP(j)/T/EWP(t)/ETI IJP(c) JD/WW/WB/GM/WH

ACC NR: AP6018790 (A) SOURCE CODE: UR/0416/65/000/012/0075/0079

AUTHOR: Putilov, V. (Engineer, Lieutenant commander); Sharapov, V. (Engineer, Lieutenant commander)

ORG: none

TITLE: Outside storage of goods

SOURCE: Tyl i snabzheniye sovetskikh vooruzhennykh sil, no. 12, 1965, 75-79

TOPIC TAGS: equipment storage technique, corrosion protection, corrosion inhibitor

ABSTRACT: The problem of protecting goods and equipment (stored in the open) against atmospheric precipitation, humidity, temperature fluctuation, solar radiation, dust, wind, etc. is discussed. An effective means of combating corrosion is to enclose a piece of equipment in an air tight plastic cover and pump out the air. The use of grease and spray enamel coatings is also recommended for the protection of metal from the action of the elements. Goods and equipment are stored on concrete, cobblestones, and wooden platforms. The use of special steel and plastic storage containers is also discussed. Orig. art. has: 4 photographs.

SUB CODE: 13,15/ SUBM DATE: none

Card 1/1 11b

18(3)

AUTHORS: Grebenik, V. M., Dashevskiy, Ya. V., Sokolov, L. D., Sharapov, V. A.

SOV/163-59-1-15/50

TITLE: Mechanization of the Charging of Furnaces for Iron Alloys (Mekhanizatsiya zagruzki ferrosplavnykh pechey)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 68-72 (USSR)

ABSTRACT: In the Sibirskiy metallurgicheskiy institut (Siberian Institute of Metallurgy) a machine has been developed by the authors (Ref 1) with a rotating tube for charging furnaces for iron alloys. This is a short description of this machine. The operative part of the machine is the rotating metal tube with a diameter of 350 mm and a length of 4.5 m. The speed of this tube is 35-45 revs/min. The tube is mounted on a special truck which can travel on a platform. In figure 1 the three characteristic positions of the tube during charging are shown: 1) at an angle with the electrode. 2) Between the electrodes and 3) Pointing into the same direction as the electrode. The machine is equipped with five electric motors which provide the power for the following motions of the machine: rotation of the tube around its longitudinal axis, inclination (tilting) of the tube through an angle of 15-20°,

Card 1/3

Mechanization of the Charging of Furnaces for Iron Alloys

SOV/163-59-1-15/50

forward and backward movement of the tube for charging and withdrawing the charger, (if the machine runs on rails,) the rotation of the tube around a vertical axis and the traveling on the platform. The capacity of the machine can reach 35 t/hour in consideration of the tube inclination and the speed. The first test model of such a machine was constructed according to a simplified design due to the proposals of V. F. Volkov and I. Ya. Pelenovskiy, workers of the Zaporozhskiy ferrosplavnyy zavod (Zaporozh'ye Iron Alloy Works). It was tested with one of the works furnaces. The results of the test runs proved to be satisfactory and demonstrated that this machine is capable of handling the charging of furnaces in accordance with technological requirements. A short summary of the experience collected in the operation of two model chargers is presented. There are 3 figures and 2 Soviet references.

ASSOCIATION: Sibirskiy metallurgicheskiy institut (Sibirskiy Institute of Metallurgy)

SHCHERBAKOV, G.A.

AUTHOR: Avakyan, A.B., Shapiro, L.N., and Sharapov, V.A., Engineers 98-58-4-11/18

TITLE: Some Questions Pertaining to Water Reservoir Projects (Nekotoryye voprosy proyektirovaniya vodokhranilishch)

PERICDICAL: Gidrotekhnicheskoye Stroitel'stvo, 1958, Nr 4, pp 45-47 (USSR)

ABSTRACT: These are answers to letters and questions on compensation of losses incurred by the flooding of land for water reservoirs. G.A. Chernyy is of the opinion that such losses are frequently minimized for the sake of boosting the effectiveness of hydrotechnical installations. The problem of such losses should be considered from three angles: 1) economic evaluation of the land to be sacrified, 2) economic re-settling of the farming population, and 3) compensation for the loss of agricultural production in the flooded area. There exist no hard and fast rules, nor any universal method for solving this problem, since each case differs. Any compensatory action for land losses should be preceded by an economic analysis of each farm. All farms affected should be divided in two groups - those in need of compensation and those requiring no compensation. The case of each farm should then be considered individually and collectively, with a view to possible redistribution of the land and re-

Card 1/2

98-58-4-11/18

Some Questions Pertaining to Water Reservoir Projects

organization of the agricultural production. In view of the fact that construction of a hydroelectrical installation with an adjoining water reservoir brings about a change in the economic structure of the area in which it is located, a certain reorientation of the population should try to adapt the people to the new economic conditions. There are two Soviet references.

AVAILABLE: Library of Congress

Card 2/2 1. Dams-Sociological factors 2. Water power-USSR 3. Dams-Evaluation analysis

AVAKYAN, A.B., inzh.; VOZDVIZHENSKIY, V.I., inzh.; SHARAPOV, V.A., inzh.

Ways of reducing expenses for preparatory operations in constructing reservoirs. Gidr.stroi. 29 no.3:28-31 Mr '60. (MIRA 13:6)

(Reservoirs)

AVAKYAN, A.B.; SHARAPOV, V.A.

Reservoir classification for hydroelectric power stations of the U.S.S.R. Izv. vses. geog. ob-va 92 no.6:515-521 N-D '61. (MIRA 14:1)

(Hydroelectric power stations)
(Reservoirs--Classification)

AVAKYAN, Artur Borisovich; SHARAPOV, Vladimir Alekseyevich; BOGATYREV, V.V., red.; BORUNOV, N.I., tekhn. red.

[Reservoirs of the hydroelectric power stations of the U.S.S.R.] Vodokhranilishcha gidroelektrostantsii SSSR. Moskva, Gos.energ. izd-vo, 1962. 151 p. (MIRA 15:9)
(Hydroelectric power stations--Water supply)
(Reservoirs)

AVAKYAN, A.B.; SMETANICH, V.S.; SHAPIRO, L.N.; SHARAPOV, V.A.

Reservoirs of the U.S.S.R. and the prospects for their construction. (MIRA 15:10)
Vop. geog. no.57:58-77 '62.
(Resevoirs) (Hydraulic engineering)

GLUKHOV, P.P., nauchn. sotr.; KURNACHEV, M.I., nauchn. sotr.; TSYBYKTAROVA, D.S., nauchn. sotr.; [illegible], V.S., kand. ist. nauk, glav. red.; GOVORKOV, A.A., kand. ist. nauk, red.; TUTOLMINA, O.N., kand. ist. nauk, red.; CHERNYSHEVA, V.I., red.; SHARAPOV, V.A., nauchn. sotr.; red.; SINKHO, Kh.S., red.

[The working class' effort for the reconstruction and development of Far Eastern industry, 1922-1925; collection of documents and materials] Bor'ba rabochego klassa za vosstanovlenie i razvitie promyshlennosti Dal'nevostochnoi oblasti(1922-1925 gg.); sbornik dokumentov i materialov. Khabarovsk, Khabarovskoe knizhnoe izd-vo, 1962. 412 p. (MIRA 17:9)

1. Zaveduyushchaya arkhivnym otdelom Khabarovskogo Krayevogo ispolnitel'nogo komiteta (for Chernysheva). 2. TSentral'nyy gosudarstvennyy arkhiv RSFSR Dal'nego Vostoka (for Sharapov).

RYBALKIN, G.I., inzh.; SHARAPOV, V.A., inzh.; VELIKIY, I.G., inzh.; MALIOVANOV, D.I., doktor tekh. nauk; PRUZHNIER, V.L., inzh.; KONDORSKIY, R.L., inzh.; TUMANOV, V.Ya., inzh.; POGORELOV, A.K., kand. tekhn. nauk

The BUKS-I equipment is an important step in the accomplishment of overall mechanization of shaft sinking. Shakht. stroi. 9 no.2: 1-3 F '65. (MIRA 18:4)

1. Kombinat Luganskshakhtostroy (for Rybalkin, Sharapov, Velikiy).
2. TSentral'nyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut podzemnogo i shakhtnogo stroitel'stva (for Maliovanov, Pruzhnier, Kondorskiy, Tumanov, Pogorelov).

40069

S/122/62/000/008/001/004
D262/D308

12.8300

AUTHORS: Sharapov, V.D., Engineer, Panyusheva, Z.A., Engineer, Mutalova, L.A., Candidate of Technical Sciences

TITLE: Prevention of Corrosion on metal surfaces in contact with Graphite materials

PERIODICAL: Vestnik mashinostroyeniya, no. 8, 1962, 8 - 12

TEXT: Graphite anti-friction material ЭГ - 46 (EG - 46) was treated with solutions of corrosion preventives (inhibitors): various compositions of nitrites and chromates, and tested. Its physical and mechanical properties after treatment (weight, hardness, compression strength, modulus of elasticity, wearing qualities) were also investigated and the results of the experiments recorded in the form of graphs and tables and analyzed. The application of atmospheric corrosion inhibitors is found to be possible and expedient. The best method is to impregnate the graphite materials

Card 1/2

Card

SHARAPOV, V.D., inzh.; PANYUSHEVA, Z.A., inzh.; PLUTALOVA, L.A., kand. tekhn.nauk

Preventing corrosion of metal surfaces contacting graphite materials. Vest.mashinostr. 42 no.8:8-12 Ag '62. (MIRA 15:8)
(Graphite) (Metals--Corrosion)

ACCESSION NR: AP4026851 S/0065/64/000/004/0036/0039

AUTHORS: Gerasimov, I.I.; Korotnenko, V.P.; Zakharov, N.A.; Putilov, V. Ye.; Sharapov, V.D.

TITLE: The profitableness of using liquid conservation lubricants for the protection of maritime equipment

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 4, 1964, 36-39

TOPIC TAGS: preservation lubricant, conservation lubricant, grease, oil, liquid conservation lubricant, economics, cost reduction, labor reduction, K-17 conservation lubricant, K-19 conservation lubricant, application

ABSTRACT: The drawbacks of conservation greases and the economies effected by liquid lubricants are discussed. Cost estimates are based on the application of K-17 and K-19 liquid conservation lubricants introduced in 1959 by the VNIINP. Examples are given of savings in labor due to the comparative ease of applying the liquid materials in comparison to the solid, and the longer preservation effected (3 years) by the liquid materials, eliminating need for

Card 1/2

ACCESSION NR: AP4026851

annual reapplication. Although the initial cost of the liquid lubricants is high, much less K-17 or K-19 is required for protection: film thicknesses of only 0.05-0.1 mm. are required in comparison to 2.5-3 mm. coatings of greases. The liquid materials can be applied cold; other conservation lubricants must be heated themselves and applied to heated surfaces. The liquid materials can be readily removed; the dismantling of machinery associated with grease removal is not required. Orig. art. has: 2 tables.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: FL NR REF SOV: 000 OTHER: 000

Card 2/2

L 53913-65 EWT(m)/EPF(c)/EWA(d)/T/EWP(t)/EWP(b) Pr-4 BW/JD/WB/DJ

ACCESSION NR: AP5013412 UR/0375/65/000/002/0069/0072 28 B

AUTHOR: Korotnenko, V. P. (Engineer, Captain); Gerasimov, I. I. (Candidate of technical sciences, Engineer, Lieutenant colonel); Zakharov, N. A. (Engineer, Commander); Putilov, V. Ye.; Sharapov, V. P. (Engineer, Lieutenant commander)

TITLE: Liquid protective lubricants as a new way of preserving marine equipment

SOURCE: Morskoy sbornik, no. 2, 1965, 69-72

TOPIC TAGS: liquid lubricant, thin film lubricant, oil additive, ship storage, protective oil, corrosion prevention

ABSTRACT: The article discusses the so-called liquid or thin-film lubricants used for the storage of ships, particularly brands K-17 and K-19. Such lubricants are based on aviation oil MS-20 and transformer oil, and can also be called protective oils. Additives introduced into these oils provide protection for ferrous and nonferrous metals under conditions of high humidity and salt content of the atmosphere for long periods of time. The composition, physico-chemical properties, areas of use, and technological process employed in applying K-17 and K-19 are described. Liquid protective lubricants save a considerable amount of labor

Card 1/2

L 53913-65
ACCESSION NR: AP5013412

(by a factor of up to 4) and guarantee one year of protection of the equipment (internal combustion engines, auxiliary turbine mechanisms, bearings, etc.). Tests under various climatic conditions showed, however, that they protect metal surfaces against corrosion for no less than five years. Thus, the use of liquid lubricants K-17 and K-19 instead of lubricating greases increases the reliability of the storage, simplifies the process of preparation for storage, and considerably reduces the cost and labor. Orig. art. has: 2 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: FP

NO REF SOV: 000 OTHER: 000

Card 2/2

L 27350-66 EWT(d)/EWT(m)/EWP(e)/T/EWP(v)/EWP(j)/EWP(h)/EWP(l) WW/RM/WH
ACC NR: AP6007723 (N) SOURCE CODE: UR/0413/66/000/003/0134/0134

AUTHORS: Sharapov, V. D.; Balashov, B. G.; Rybachek, L. T.

ORG: none

TITLE: Device for hermetic underwater sealing of an opening in a ship body during cruising. Class 65, No. 178699

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1966, 134

TOPIC TAGS: ship component, shipbuilding engineering

ABSTRACT: This Author Certificate describes a device for underwater sealing of an opening in the ship's body during cruising. The method incorporates the use of a sealing disk. To simplify construction, the sealing disk is equipped with bracing springs and a layer of sealing compound. The sealing disk is fastened to the outside surface of the ship (see Fig. 1).

Card 1/2 UDC: 629.12.01-762

L 27350-66

ACC NR: AP6007723

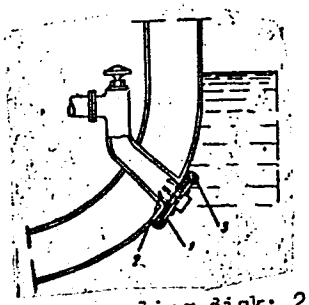

Fig. 1. 1 - sealing disk; 2 - bracing springs; 3 - layer of sealing compound.

Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 03Feb64

Card 2/2

BOCHKOV, Nikolay Vasil'yevich, professor, doktor ekonovicheskikh nauk; PERSHIN, P.N., doktor ekonomicheskikh nauk; SNEGIREV, M.A., kandidat sel'skokhozyaystvennykh nauk; SHARAPOV, V.F., doktor istoricheskikh nauk [deceased]; OZEROV, V.N., redaktor; BALLOD, A.I., tekhnicheskiy redaktor

[The history of land relationships and the organization of land use] Istoriia zemel'nykh otnoshenii i zemleustroistva. Pod red. N.V.Bochkova. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 247 p. (MLRA 9:8)
(Land tenure) (Agriculture)

SHARAPOV, Vasiliy Ivanovich; LUK'YANOVICH, I., red.; YERMOLENKO, V., tekhn. red.

[Minsk in the seven-year plan] Minsk v semiletke. Minsk, Gos. izd-vo BSSR, Red. massovo-polit. lit-ry, 1961. 77 p. (MIRA 15:4)

1. Predsedatel' ispolnitel'nogo komiteta Minskogo gorodskogo Soveta deputatov trudyashchikhsya (for Sharapov).
(Minsk--Economic policy)
(Minsk--Civic improvement)

SHARAPOV, V. I.

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5561

Author: Sharapov, V. I.

Institution: None

Title: Effect of Water on Stability of Additives in Motor Oils

Original Publication: Khimiya i tekhnol. topliva, 1956, No 4, 63-64

Abstract: Using a method developed by the author an investigation was made of the removal by water of various additives from the oil. Even a small amount of water (0.5%) removes a considerable portion of additive (up to 70%) from the oil, and this removal is not dependent on the viscosity of the oil but is determined by the nature of the additive. Most readily removed are the additives AzNII-4, AzNII-7 and IP-2, to the extent of 69, 50 and 41%, respectively; the ZIT additive is not removed from oil by the water. Additive AzNII-TsIATIM-1, of different batches is removed in different amounts: from 5 to 30%.

Card 1/1

SHARAPOV, V.I.

Controlling seed drop of hemp and Chinese bell flower with the aid of 2,4-D. Zemledelie 4 no.5:120 My '56. (MLRA 9:8)

1. Severo-Kavkazskaya opytnaya stantsiya lubyanykh kul'tur.
(Hemp) (Mallow) (2,4-D)

SHARAPOV, V.

SERENIDO, Ye.; SHARAPOV, V.

All-weather motor oils. Avt. transp. 36 no.2:15-16 F '58.
(Automobiles--Lubrication) (MIRA 11:2)

SHARAPOV, V. I.

PHASE I BOOK EXPLOITATION SOV/5055

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Gidrodinamicheskaya teoriya smazki. Opory skol'zheniya. Smazka i smazochnyye materialy (Hydrodynamic Theory of Lubrication. Slip Bearings. Lubrication and Lubricant Materials) Moscow, Izd-vo AN SSSR, 422 p. Errata slip inserted. 3,800 copies printed. (Series: Its: Trudy, v. 3)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Eds. for the Section "Hydrodynamic Theory of Lubrication and Slip Bearings": Ye. M. Gut'yar, Professor, Doctor of Technical Sciences, and A. K. D'yachkov, Professor, Doctor of Technical Sciences; Resp. Ed. for the Section "Lubrication and Lubricant Materials": G. V. Vinogradov, Professor, Doctor of Chemical Sciences; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: O. M. Gus'kova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in [illegible] Hydrodynamic Theory of Lubrication and [illegible]

Hydrodynamic Theory (Cont.) SOV/5055

Use of Lubricant Materials

Chemical Composition and Operational Lubrication Materials

~~Card 11~~/17

S/122/60/000/007/004/011
A161/A029

AUTHORS: Semenido, Ye.G., Professor, Doctor of Technical Sciences; Shchegolev, N.V., Candidate of Chemistry; Sharapov, V.I., Engineer

TITLE: Application of High Polymers in Lubrication Oils

PERIODICAL: Vestnik mashinostroyeniya, 1960, No. 7, pp. 38 - 41

TEXT: The article contains brief general information on the applications, properties and advantages of high-polymer additives to lubricant oils. The information sources referred to are mostly US and German (West Germany) patents and the proceedings of the 1957 International Petroleum Congress. It is claimed that the best effect is obtained by application of polymer additives used in Soviet high-quality motor oils on low-molecular base, produced by a Soviet method and specified in the ГОСТ 1862-51 (GOST 1862-51) standard "Technical Standards for Petroleum Products" (Ref. 1), Gostoptekhizdat, 1956. It is pointed out that a series of additives to oils ЦИАТИМ-339 (TsIATIM-339), ВНИИ НП-361 (VNII NP-361), ВНИИ НП-360 (VNII NP-360), ВНИИ НП-361а (VNII NP-361a), ИП-22 (IP-22) and other (Table 3) proved to be not applicable with polyacrylates, though in oil compositions including poly-isobutylene they behave normally; polyacrylate in its turn,

Card 1/2

in other combinations (i.e., with antioxidant additives), is a valuable viscous additive. These data are recommended to take into account. There are 7 graphs, 3 tables and 17 references: 4 Soviet, 9 English and 4 German.

89959

S/065/61/000/002/005/008
E194/E284

15.6600 2209, 1583

AUTHORS: Kaverina, N. I. and Sharapov, V. I.

TITLE: Alteration in the Viscosity of Thickened Oils as a Consequence of Thermal Degradation of the Polymer

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1961, No. 2, pp. 52-57

TEXT: The stability of lubricants thickened with polymers depends mainly on the thermal and mechanical stability of the polymer. Thermal and mechanical degradation of the polymer reduces the molecular weight of polymer in the oil so reducing the viscosity of the blended oil. Experimental results are quoted to demonstrate the reduction in viscosity of oils thickened with various amounts of polyisobutylene П-20 (P-20) of molecular weight 20 000 and П-30 (P-30) of molecular weight 30 000. It is found that the viscosity increment resulting from addition of polymer increases with the polymer concentration and accordingly a given amount of polymer degradation will cause different viscosity changes in solutions with different concentrations of polymer. If curves of polymer degradation are compared with curves of oil

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89959

S/065/61/000/002/005/008
E194/E284

Alteration in the Viscosity of Thickened Oils as a Consequence of Thermal Degradation of the Polymer

thickening by the same polymers it is possible to assess the apparent change in polymer concentration expressed as a percentage, which is equivalent to the reduction in viscosity observed in given time intervals, this change is denoted $\Delta c\%$. Tests made with turbine oil thickened with additives P-20 and P-30 in amounts of 5, 10, and 15% show that after heating to 200°C for 20 hours there is negligible change in Δc, whereas after 50 hours there are appreciable differences in the absolute value of Δc, the values for 5, 10 and 15% solutions of polymer being approximately in the ratio 1:2:3 for both types of polyisobutylene. Thus the amount of polymer that is degraded in a given time interval at this temperature is practically proportional to the concentration of it in the oil. A similar result was found in tests on the degradation of vinypol of molecular weight 9 000. It should be noted that at high concentrations of additive a small change in concentration corresponds to a large change in viscosity. It is found that Δc is practically a linear function of time so that degradation occurs

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89959
S/065/61/000/002/005/008
E194/E284

Alteration in the Viscosity of Thickened Oils as a Consequence of Thermal Degradation of the Polymer

at constant rate depending only on the total concentration of polymer. The same effect is confirmed by curves of change of viscosity during the process of degradation. After twelve hours at 200°C the value of Δc for vinypol is 4.4 whilst for solutions of polyisobutylene of higher molecular weight and the same concentration this amount of degradation is observed only after 60-70 hours for additive P-30 and 100 hours for P-20. With vinypol as with polyisobutylene Δc is a linear function of time. The results show that vinypol is appreciably less stable than the polyisobutylene. As it is of interest to assess the influence of temperature on the stability of polyisobutylene and vinypol over the working temperature range tests were made at temperatures between 20 and 250°C. With polyisobutylene the first signs of degradation are observed at 100°C and thereafter degradation accelerates with increasing temperature. If curves are plotted of the fall in concentration Δc which is equivalent to the viscosity change observed in 12 hours at various temperatures it is found

Card 3/4

S/065/61/000/002/005/008
E194/E284

Alteration in the Viscosity of Thickened Oils as a Consequence of Thermal Degradation of the Polymer

that the temperature coefficient of degradation i.e. the rate of degradation on changing the temperature by 1° increases somewhat with increase in the molecular weight of polymer and with increase of temperature. However, the change in the absolute value of the temperature coefficient of degradation that results from these factors remains small within the range of temperature and molecular weight considered. Tests made with vinypol show that the degradation is about three times greater than that of polyisobutylene under the conditions tested. The selection of molecular weight of polymer for use in blending oils is often of importance and the thermal stability of the oil should be considered in such blends. Tests were made on a number of oils of equal viscosity produced by thickening turbine oil with various amounts of polymers of different molecular weights. Heating tests show that the higher the molecular weight of the polymer the greater the observed drop in viscosity and accordingly from the standpoint of stability of viscosity polymers of lower molecular weight are advantageous. There are 7 figures, 5 tables and 3 Soviet references.

Card 4/4

S/065/61/000/009/003/003
E030/E135

AUTHORS: Sharapov, V.I., Semenido, Ye.G., and Shchegolev, N.V.

TITLE: Regulation of the fractional composition of base oils as a means of radically improving their quality

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1961, No.9, pp. 32-37

TEXT: Principles are evolved experimentally for improving lubricants by accurately controlling the initial and final boiling points of the cuts, and using additives. The principles are of interest in the West, although the details of the base oils are of secondary interest. The initial boiling point is determined primarily by the ambient air temperatures in which the oils will be used. Ye.G. Semenido, I.A. Ivanov and I.N. Kaverina (Ref.10: NKh No.1, 1955) showed that for automobile lubricants not more than 5% of material boiling below 340 °C may be included, to minimize loss by evaporation, and for diesel lubricants not more than 5% below 320 °C may be included. The final boiling point is determined primarily for ensuring good low temperature properties (noting that for more than 50% of the USSR temperatures are below

Card 1/ 3

Regulation of the fractional ....

0 °C for 130-300 days, and January temperatures are around -20 to -50 °C. For Arctic and winter grades, viscosities at -30 °C should be specified. The final boiling point was increased in 25 °C intervals from 350 to 425 °C for oil cuts from five crudes; Makat-Jurassic, Baku commercial mixture, Buzovny, Binagady, and commercial Eastern mixture from the NKPZ. For the first two and the last one, the ratio of viscosity at 50 °C to that at 100 °C rose by about one, from values around 2.4 or 2.7 to around 3.7 to 3.8, but for the Buzovny and Binagady the rise was much greater. By adsorption of the Buzovny over silica gel, it was found that only the aromatics caused the rise, and the naphtheno-paraffinic components had excellent viscosity indices. The aromatics were similarly the prime cause of carbon deposits. Such results also hold with thickened oils (using polyisobutylene, MW around 20 000). By altering cut point, viscosity additives, and thickener ratio, a wide range of satisfactory oils was obtained. For automobile engines, up to 50% of material up to 500 °C could also be added, provided the ON were also increased by 7-8 by using additives. There are 5 figures, 3 tables and 10 references: 3 Soviet and 7 non-Soviet.

Card 2/3

3L893
S/081/62/000/003/074/090
B171/B102

11,9700

AUTHORS: Semenido, Ye. G., Vakurov, P. S., Shchegolev, N. V., Sharapov, V. I., Zarubin, A. P., Zakharov, G. V.

TITLE: Influence of a sulfurous base of condensed oil upon the engine

PERICDICAL: Referativnyy zhurnal. Khimiya, no. 3, 1962, 493-494, abstract 3M227 (Sb. "Khimiya seraorgan. soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh. v. 4" M., Gostoptekhizdat, 1961, 212-216)

TEXT: The results are given of investigations of the performance of the bodied up $AC_{п}$-10 (AS_{p}-10) test oil obtained from sulfurous petroleum. It has been shown that the bodied up sulfurous base (without multifunctional additive) has a relatively low corrosive effect (9 g/m^2 in 50 hrs) and is, in this respect, superior to the Baku petroleum base. This is explained by the positive influence of the natural S-compounds present in the oil of Novo-Ufimskiy zavod (Novo-Ufa Plant). Investigations of effectiveness of different additives permitted the selection of the ВНИИНП-365а (VNIINP-365a)

Card 1/2

Influence of a sulfurous base ...

multifunctional additive, to the test oil. This additive is a mixture of Ba alkylphenolate and of a sulfurous compound. It has been established by 600-hr tests in a GAZ-51 (GAZ-51) engine that the test oil with S-content $\leq 1\%$ and with the above additive shows a performance superior to the industrial-50 and AH_{π}-10 (AN_{p}-10) Baku oils. [Abstracter's note: Complete translation.]

Card 2/2

S/081/62/000/005/092/112
B160/B138

AUTHORS: Semenido, Ye. G., Sharapov, V. I., Shchegolev, N. V.

TITLE: Effect of viscosity index improvers on the working properties of oils

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 531, abstract 5M235 (Sb. "Prisadki k maslam i toplivam", M., Gostoptekhizdat, 1961, 357 - 365)

TEXT: The article discusses permissible concentrations of polymers in thickened heavy diesel engine oils and the selection of the optimum molecular weight of polymers as viscosity index improvers. It was found that high concentrations (up to 10%) of polyisobutylene can be used to obtain thickened heavy diesel oils on a low-viscosity base; the optimum molecular weight is 20,000. The problem of combining polymer, polyfunctional and other additives is discussed together with that of the effect of polymers on the anti-wear properties of oils. [Abstracter's note: Complete translation.]

Card 1/1

KAVERINA, N.I.; SHARAPOV, V.I.

Viscosity change of thickened oils as the result of the thermal destruction of a polymer. Khim.i tekh. topl.i masel 6 no.2:52-57 F '61. (MIRA 14:1)
(Lubrication and lubricants) (Polymers)

SHARAPOV, V.I.; SEMENIDO, Ye.G.; SHCHEGOLEV, N.V.

Control of the fractional composition of the base of oils as a method for the radical improvement of their quality. Khim.i tekh. topl.i masel 6 no.9:32-37 S '61. (MIRA 14:10)
(Lubrication and lubricants)

SHARAPOV, V.I.; FOMINA, A.M.

Determination of the saturated vapor pressure of motor fuels in accordance with the All-Union Standard 6668-53. Khim. i tekh. topl.i masel 7 no.1:64-65 Ja '62. (MIRA 15:1)
(Motor fuels) (Vapor pressure)

SHARAPOV, V.I.

1

S/081/62/000/004/070/087
B158/B110

AUTHORS: Dem'yanov, L. A., Semenido, Ye. G., Vorob'yev, P. I., Shchegolev, N. V., Senichkin, M. A., Sharapov, V. I.

TITLE: Tracer method of investigating the wear-resistance properties of sulfurous oils

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 483, abstract 4M184 (Sb. "Khimiya seraorgan. soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh. v. 4", M., Gostoptekhizdat, 1961, 206-211)

TEXT: The anti-wear properties of thickened sulfurous oils from the Novo-Ufimka NPZ and Baku oils have been investigated. The test bench consisted of a ЗИЛ-123Ф (ZIL-123F) engine with full instrumentation and radiometric apparatus for the determination of the radioactivity of the oil. The greater part of both oils contained multi-functional additives for the improvement of their operational qualities. The wear resistance of the oils was assessed from the slope of the wear line to the X-axis (tan α), while a comparative assessment was made from the "relative

Card 1/2

Tracer method of investigating...

variation in wear tempo", which is the ratio of tan α of a standard oil (industrial 50 + 3 % ЦИАТИМ-330 (TsIATIM-330)) and tan α of the test specimen expressed in percentages. The high wear resistance of the oils was found to be determined by the S-concentration of the Novo-Ufimka oil base fraction. The thickened oils showed better wear resistance than ordinary oils with additives and the sulfurous ones produced by the Novo-Ufimka NPZ were somewhat better than those from Baku. [Abstracter's note: Complete translation.]

Card 2/2

S/262/62/000/008/016/022
I007/I207

AUTHORS: Semenido, E. G., Vakurov, P. S., Shchegolev. N. V., Sharapov, V. I., Zarubin, A. P. and Zakharov, G. V.

TITLE: Influence of the sulfur content of condensed lube oil on engine performance

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustanovki, no. 8, 1962, 58, abstract 42.8.312. In collection "Khimiya sero-organ. soyedineniy, soderzahashichikhsya v neftyakh i nefteproduktakh, Moscow, Gestoptekhizdat", v. 4, 1961, 212–216

TEXT: Data are reported on the study of the operating qualities of the experimental АСП-10 (ASP-10) lube oil (selective motor-car lube oil, mixed with an all-purpose additive and condensed by addition of polybutylene, to a viscosity of 100 centistokes at 100°C) as well as results of 600-hour bench testing of the ГАЗ-51 (GAZ-51) engine. The sulfur-containing (S up to 1%) ASP-10 oil mixed with the ВНИИНП-361а (VNIINP-361a) additive proved to have higher qualities than Baku lube oils, such as, the commercial grade-50 oil and the АКП-10 (AKP-10) oil (АзНИН-8) [AzNIN-8]). There are 5 tables and 4 references.

[Abstracter's note: Complete translation.]

Card 1/1

RYABOVA, A.S.; BELOVA, S.R.; SHARAPOV, V.I.

Determination of the tetraethyl-lead content in automobile gasoline by the chromate method. Nefteper. i neftekhim. no.2:11-12 '63. (MIRA 17:1)

SHARAPOV; V.I. FOMINA, A.M.

Determining the tars present according to All-Union State Standards 8489-58. Nefteper. i neftekhim. no. 3:16-18 '64. (MIRA 17:5)

L 22629-65 EWT(m)/EPF(c)/EWA(d)/T/EWP(t)/EWP(b) Pr-4 IJP(c) JD/WB/DJ

ACCESSION NR: AP5001628 S/0318/64/000/012/0028/0029

AUTHOR: Sharapov, V. I., Fomina, A. M.

TITLE: Preparation of lead sheets used for determining the corrosion activity of oils according to GOST 5126-49 and GOST 8245-56

SOURCE: Neftepererabotka i neftekhimiya, no. 12, 1964, 28-29

TOPIC TAGS: oil corrosiveness, corrosion testing, lead corrosion, lubricating oil, lead polishing, chemical polishing

ABSTRACT: A rapid and reliable method is presented for cleaning and polishing the lead sheets used in standard Soviet corrosion tests for lubricants (Gost 5126-49 and Gost 8245-56). The sheets are immersed for 10-15 min. in chemically pure 2 N hydrochloric acid, washed with water, and dried with filter paper. Results obtained by both methods and with both highly corrosive oils and high-quality lubricants were readily reproducible, whereas larger deviations were obtained with lead sheets which were polished by the standard mechanical method. The proposed technique and mechanically polished sheets gave similar corrosion values. The sheets can be used 5 times if prepared by the new technique, and they can be produced

Card 1/2

L 22629-65

ACCESSION NR: AP5001628

from large sheets or by casting or rolling. Orig. art. has: 3 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: FP, IE

NO REF SOV: 000 OTHER: 000

Card 2/2

L 55243-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/DJ/RM
ACCESSION NR: AP5014952 UR/0065/65/000/006/0053/0055
539.55:665.521.5

42
40
B

AUTHOR: Sharapov, V. I.

TITLE: Viscosity properties of oils thickened by polymers

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 6, 1965, 53-55

TOPIC TAGS: lubricating oil, engine, lubricant viscosity, viscosity measurement, polymer, polymethacrylate, polyisobutylene/ GAZ 51 engine, ZIL 120 engine

ABSTRACT: The effect of a shifting velocity gradient on the viscosity of polymer-thickened oils was registered in a rotation viscosimeter in an effort to study oil fluidity at low temperatures. Before the curve of this process was registered, the oil specimens remained for 30 minutes at various low temperatures (± 0.1C). Measurements were made at the values of the shifting velocity gradients approaching those at the beginning of a crankshaft rotation. Data on the physical characteristics of oil mixtures studied here are tabulated. It was noted that the viscosity of a polymer-thickened oil was lowered temporarily under the action of shift. This effect, which became greater with the increase in the shifting velocity gradient, was explained by the orientation of polymer molecules in the stream. It was expressed as a parameter ξ, indicating the degree of the temporary viscosity

Card 1/2

L 55243-65
ACCESSION NR: AP5014952

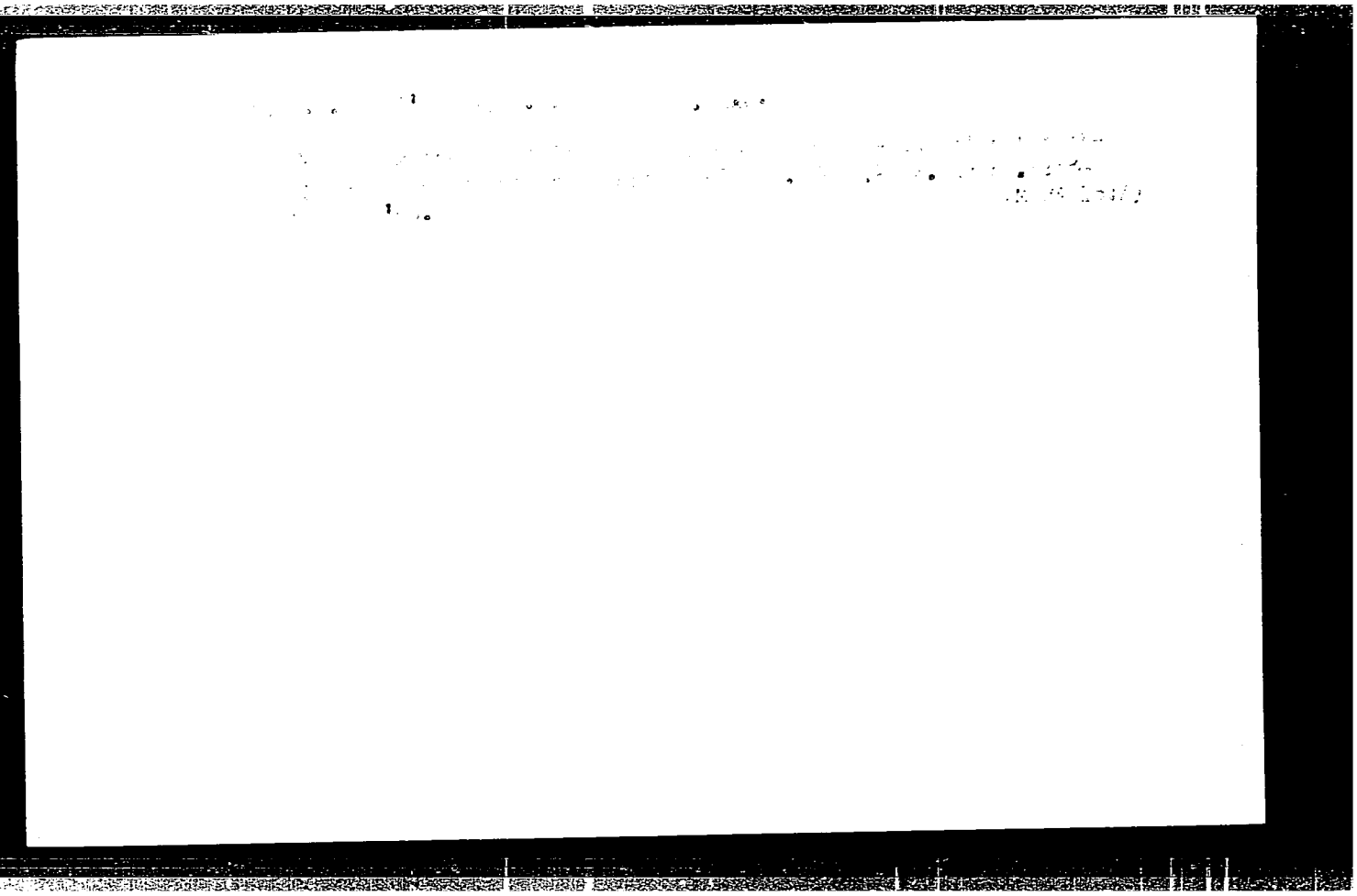
lowering and representing the ratio of the viscosity at the gradient 6 sec^{-1} to that at the 158 sec^{-1}. The straight-line relation of ξ to the molecular weight of a polymer (polyisobutylene) was determined experimentally, and is shown in Fig. 1 on the Enclosure. Figure 2 shows the same relation with respect to oil viscosity. With the increase in oil viscosity, ξ increased regardless of the polymer type and its molecular weight. It decreased with the rise of temperature. This feature favorably affected the starting properties of motor oils at low temperatures. Experimental results sustained the statement of E. Klays and I. Fenske (Lubric. Engin. March-April, 1955, p. 101) that a temporary loss of viscosity in thickened oils makes them pass through small openings faster than the equiviscous Newton fluid. This effect was regulated by a proper combination of molecular weights of polymers and basic oils. The regularities established helped to solve the problems of lubricant application in engines like GAZ-51 and ZIL-120, characterized by high gradients of shifting velocity (304 000 - 310 000 sec^{-1}). Orig. art. has: 1 table and 2 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 02 SUB CODE: FP, OC

NO REF SOV: 002 OTHER: 002

Card 2/4



L 15249-66 EWT(m)/EWP(j)/T DJ/RM

ACC NR: AP6001882 (A) SOURCE CODE: UR/0065/65/000/012/0044/0047

AUTHORS: Sharapov, V. I.; Vilenkin, A. V.; Kichkin, G. I. 45 B

ORG: none

TITLE: Influence of polyisobutylene on the wear-resistant properties of an oil base 11,44

SOURCE: Khimiya i tekhnologiya topliv i masel, n. 12, 1965, 44-47

TOPIC TAGS: lubricant, lubricant additive, polyisobutylene, organic lubricant

ABSTRACT: The effect of polyisobutylene additive on the wear-resistant properties of a number of lubricating oils was studied. The experimental technique employed is described by K. I. Klimov and A. V. Vilenkin, (Avtor. svid. No. 121967). The dependence of the critical load on the concentration of polyisobutylene, the effect of the molecular weight of the polyisobutylene on the wear-resistant properties of the oils, and the temperature dependence of the latter were studied. The experimental results are presented in graphs and tables (see Fig. 1). It was found that the addition of polyisobutylene improved the lubricating properties of the oils, the effect being more pronounced the lower the molecular weight of the additive. The protective action of polyisobutylene decreased with increasing temperature. It is suggested that the additive improves the lubricating properties of the oil by forming a protective film on the frictional surface.

Card 1/2 UDC: 541.6:66.022.37:665.521.5

2

L 15249-66

ACC NR: AP6001882

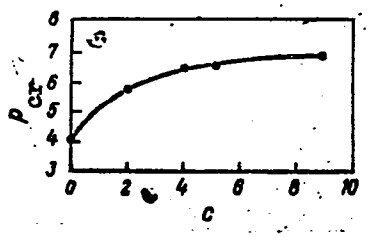


Fig. 1. Dependence of critical load (P_{cr}, kg) on the concentration of polyisobutylene in the oil (C, %).

Orig. art. has: 2 tables and 4 graphs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 004

Card 2/2

SHARAPOV, V.M., aspirant

Therapy and prophylaxis of trichophytosis in Karakul sheep.
Veterinariia 39 no.8:31-34 Ag '62. (MIRA 17:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii.

SHARAPOV, V.M., aspirant

Ways for the elimination of trichophytosis in Karakul sheep. Veterinariia 41 no.3:38-40 Mr '64. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii.

NOSKOV, A.I., kand. veterin. nauk; SHARAPOV, V.M., mladshiy nauchnyy sotrudnik

Toxicity of mixed feeds infected with fungi. Veterinariia 41 no.1:84-85 Ja '65. (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii (for Noskov). 2. Biologicheskiy institut Sibirskogo otdeleniya AN SSSR (for Sharapov).

L 1677-66

ACCESSION NR: AR5018560 UR/0299/65/000/014/B043/B043

SOURCE: Ref. zh. Biologiya. Svodnyy tom, Abs. 14B320

AUTHOR: Sharapov, V. M. 55

TITLE: Antibiotic and toxigenic properties of fungi isolated from the intestines of Eastern May beetle larva

CITED SOURCE: Sb. Issled. po biol. metodu bor'by s vredit. sel'sk. i lesn. kh-va. Novosibirsk, 1964, 107-111

TOPIC TAGS: fungus, toxicology, antibiotic, insect control, bacterial disease

TRANSLATION: Of 32 investigated strains of fungi from the intestines of May beetle larva, 20 antibiotic substances were isolated out into an external medium. With respect to the number of antagonists, the types of fungi were distributed as follows in descending order: Trichoderma, Penecillium, Acremorium, Helicomyces, and Sordaria. The greatest number of antagonists were related to Bacillus dendrolimus, and then to Bacillus subtilis and Bacillus tumescens, Bacillus

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L 1677-66

ACCESSION NR: AR5018560

delicatulum proved resistant to all tested fungus strains. Repeated freezing over the course of 50 days, storage at low pH values, and heating to 65° did not lower the antibiotic activity of liquid cultures of the fungi. The author advances the hypothesis that toxic properties of fungus origin play a part in the development of nonspecific immunity to bacterial diseases in insects. I. Rubtsov.

SUB CODE: LS ENCL: 00

Card 2/2

MAGNITSKIY, [illegible]

Appearance of electron paramagnetic resonance signals during the low-temperature adsorption of various gases on reduced rutile (TiO2). Teoret. i eksper. khim. 1 no.3:381-386 My-Je '65. (MIRA 18:9)

1. Institut khimicheskoy fiziki AN SSSR, Moskva.

KASLYAKOV, Vasiliy Nikolayevich; ARNSHTEYN, G.E., retsenzent; SHIRINKIN, A.D., retsenzent; SHARAPOV, V.N., red.; YEREMEYEV, P.G., red.; FEDYAYEVA, N.A., red. izd-va; RIDNAYA, I.V., tekhn. red.

[Raft towing]Buksirovka plotov. Moskva, Izd-vo "Rechnoi transport," 1962. 185 p. (MIRA 15:12)
(Towing) (Rafts)

SHARAPOV, V.N.

Relations between dikes, skarns, and ores in the Sheregoshevskoye deposit in Gornaya Shoriya. Geol i geofiz. no.9:68-75 '60. (MIRA 14:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Gornaya Shoriya--Geology, Economic)

LAPIN, S.S.; SHARAPOV, V.N.

Genesis of the Abakan iron ore deposit (Western Sayan Mountains). Geol. i geofiz. no.4:36-51 '61. (MIRA 14:5)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Abakan region (Sayan Mountains)--Ore deposits)

OLEYNIKOV, B.V.; SHARAPOV, V.N.

Trappean volcanism in the western Siberian Platform. Geol. i geofiz. no.6:51-60 '61. (MIRA 14:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Siberian Platform--Rocks, Igneous)

ZEYTS, F.Yu.; SHARAPOV, V.N.

Genetic relationships between the igneous activity and the complex metal mineralization in the Kondoma region of Gornaya Shoriya. Geol. i geofiz. no.8:113-116 '63. (MIRA 16:10)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk, Rudnik Tashtagol.
(Gornaya Shoriya—Ore deposits)

SHARAPOV, V.N.; LAPIN, S.S.

Effect of the composition of displaceable rocks on the distribution of iron in the ore bodies of some metasomatic deposits in the Altai-Sayan. Geol. rud. mestorozh. 7 no.1:23-36 Ja-F '65. (MIRA 18:4)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

BOYARSHINA, A.P.; VASIL'YEVA, A.I.; SHARAPOV, V.N.

Genetic characteristics of the Medvezh'ye deposit in the Kaz group of iron ore deposits. Geol. i geofiz. no.2:149-152 '65. (MIRA 18:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk, i Zapadno-Sibirskoye geologicheskoye upravleniye, Novokuznetsk.

SHARAPOV, V. N.

SOV/89-5-3-3/15

AUTHORS: Dollezhal', N. A., Krasin, A. K., Aleshchenkov, P. I., Grigoryants, A. N., Florinskiy, B. V., Minashin, M. Ye., Yemel'yanov, I. Ya., Kugushev, N. M., Sharapov, V. N., Mityayev, Yu. I., Galanin, A. N.

TITLE: A Uranium-Graphite Reactor With Superheating of Steam of High Pressure. II (Uran-grafitovyy reaktor s peregrevom para vysokogo davleniya) (Continued from abstract 2/15)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 233-244 (USSR)

ABSTRACT: The graphite mantle of the reactor (diameter 9.6 m, height 9 m) is built into a cylindrical steel container. The container is filled with nitrogen in order to prevent burn-up of the graphite. The active zone of the reactor has a diameter of 7.2 m and a height of 6 m. As a lateral reflector graphite of 0.8 m thickness is used. Graphite of 1 m thickness is used as upper reflector, and above it a layer of cast iron having a thickness of 0.5 m is fitted. Together, these components serve as the main portion of the upper biological shield. Graphite of 0.6 m thickness is used as lower reflector. In the graphite structure openings for the channels are provided. 730 of them are provided with fuel ele-

Card 1/4

ments which are cooled by means of boiling water and contain up to 33% percentage by weight of steam at the output. 268 channels are cooled by steam which is heated up to the corresponding turbine temperature. Six channels contain the automatic regulating rods, 78 channels are provided for the compensation rods, and 16 for the shim rods. The ionization chambers and counting tubes are located in 36 channels. The fuel channels, the regulating- and shim rods as well as the arrangement of the channels in the active zone are shown in form of drawings. The circuit diagram for the reactor turbine shows the connection between the reactor, the two-stage turbine, two condensers, a system of additional heating of the feed-water, a de-aerator (6 atm), 2 preheaters (for high pressure), condensation- and feed pumps. The water is conveyed into the boiling channels by way of two centrifugal pumps. When entering these channels the water has a temperature of 300° C and a pressure of 155 atm. The mixture of steam and water formed in these channels reaches the separator, where steam and water are separated. From here the water is conveyed to the preheater of the steam generator (which consists of 2 parts), where it is cooled from the saturation temperature of 340° C (pressure in the sep-

Card 2/4

arator 150 atm) down to 300° C. Heat is transferred to the feed-water of the secondary circuit. The water of this circuit is in the first section of the preheater brought from a temperature of 215° C to saturation temperature, which corresponds to a pressure of 110 atm. In the second part it is evaporated until the quantity of steam corresponding to weight attains 30%. The secondary steam produced in the steam generator is led in to the steam channels of the reactor, where it is heated up to a temperature of 510° C. The steam reaches the turbine with a pressure of 90 atm and a temperature of 500° C. The main building of the electric power plant consists of 4 parts arranged one behind the other, the machine hall, the operation room, the de-aerator, and the reactor hall. For an average cycle of 730 days it is shown by calculation that the cost of atomic kWh are equal to the kWh obtained by means of the usual ... Fuel costs amount to from 30 to 40% of the total costs. If the fuel channels and fuel elements operate in a stable manner, it can be proved that by a slight increase of the degree of enrichment in uranium the average cycle can be increased, which leads to a reduction of costs. There are 9 figures and ...

Card 3/4

SHARAPOV, V.N.

21(4) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Engergy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; yadernyye reaktory i yadernaya energetika. (Reports of Soviet Scientists; Nuclear Reactors and Nuclear Power) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, A.I. Leypunskiy, Member, Ukrainian SSR Academy of Sciences, I.I. Novikov, Corresponding Member, USSR Academy of Sciences, and V.S. Fursov, Doctor of Physical and Mathematical Sciences; Ed.: A.P. Alyab'yev; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. Yu. I. Koryakin is the science editor of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

25555
S/170/61/004/008/005/016
B116/B212

26,2262

AUTHORS: Bondarenko, A. V., Voznesenskiy, Yu. A., Minashin, M. Ye., Sidorova, I. I., Sharapov, V. N.

TITLE: Investigation of the automatic control system for the power level of a power reactor

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 8, 1961, 54-62

TEXT: The present paper deals with the calculation of the control system of a power reactor. A concrete example is given for the investigation of the transient processes for one of the variants of a projected reactor having an automatic power control system. A number of questions are discussed which are connected with the automatic reactor during non-steady operation. The variant mentioned is shown in Fig. 1. The control object is built similarly to that of the first atomic power plant in the USSR, namely, a heterogeneous uranium-graphite boiling reactor. This reactor has an effective neutron life of $l = 4 \cdot 10^{-4}$ sec and a negative temperature effect. Fig. 2 shows the cross section of a fuel element in the graphite

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Investigation of the automatic ...

block of the core. Three groups of equations are set up: For the change of neutron density in the reactor in time:

$$\frac{dn}{d\tau} = \frac{k_{эфф}(1-\beta)-1}{l} n + \sum_{i=1}^{6} \lambda_i c_i, \qquad (1)$$

$$\frac{dc_i}{d\tau} = -\lambda_i c_i + \frac{k_{эфф}\beta_i}{l} n,$$

$$\beta = \sum_{i=1}^{6} \beta_i, \; i = 1, 2, \ldots, 6. \qquad (2\text{-}7),$$

where τ denotes the time, n the neutron density, $k_{эфф} = k_{eff}$, λ_i the decay constant of the fragments of the i-th group of delayed neutrons, l the effective relative yield of delayed neutrons of the i-th group (taking into account the production energy), c_i the effective life of neutrons in the

Card 2/11

Investigation of the automatic ...

reactor. The deviation $\Delta k = k_{eff} - 1$ is caused by an external perturbation ($\Delta k_{perturbation}$) and by a change in reactivity 1) due to the motion of the control rods (automatic controller): Δk_{AR}, 2) due to the insertion of emergency protection rods into the core: Δk_{ep}; and 3) due to the deviation of the uranium, moderator and coolant temperatures: Δk_t; Δk combines additively all of these. The second group of equations expresses the change in time of the determining parameters of the automatic control system. They read: $\frac{d\Delta\varphi_1}{d\tau} = k_1[n(\tau) - 1]$ (8)

$T_{MV}\frac{d\Delta u}{d\tau} + \Delta u = k_2(\Delta\varphi_1 - k_3\Delta\varphi_2)$ (9) $\frac{d\Delta\varphi_2}{d\tau} = x$ (10),

$T_{SM}\frac{dx}{d\tau} + x = k_4\Delta u$ (11), $\Delta k_{AR} = -k_5\Delta\varphi_2$ (12),

where $n(\tau)$ denotes the relative neutron density; φ_1 the angle of rotation,

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Investigation of the automatic ...

of the drive (of the intermediate switch mechanism); φ_2 the angle of rotation of the switch mechanism drive; u the potential at the output of the magnetic amplifier; T_{MV} the time constant of this amplifier; T_{SW} the time constant of the switch mechanism; k_1, k_2, k_3, k_4, k_5 denote the transmission coefficients of the control elements. The third group of equations makes it possible to determine the mean change of the uranium temperature ($\overline{\Delta t_u}$) in the reactor and also the change of k_{eff} when the uranium temperature changes by 1°C and by Δk_t, if the temperature coefficient of reactivity (ϱ_{temp}) is known. These equations read as follows:

$$\frac{d\Delta t_u^I}{d\tau} = -0{,}650\,\Delta t_u^I + 0{,}596\,\Delta t_f^I + 8{,}63\,[n(\tau) - 1]; \qquad (13)$$

$$\frac{d\Delta t_u^{II}}{d\tau} = -0{,}654\,\Delta t_u^{II} + 0{,}600\,\Delta t_f^{II} + 16{,}2\,[n(\tau) - 1]; \qquad (14)$$

$$\frac{d\Delta t_u^{III}}{d\tau} = -0{,}661\,\Delta t_u^{III} + 0{,}607\,\Delta t_f^{III} + 20{,}4\,[n(\tau) - 1]; \qquad (15)$$

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$$\frac{d\Delta t_u^{IV}}{d\tau} = -1{,}52\,\Delta t_u^{IV} + 20{,}4\,[n(\tau) - 1]; \qquad (16)$$

$$\frac{d\Delta t_f^{I}}{d\tau} = 1{,}77\,\Delta t_u^{I} - 7{,}64\,\Delta t_f^{I}; \qquad (17)$$

$$\frac{d\Delta t_f^{II}}{d\tau} = 1{,}69\,\Delta t_u^{II} - 4{,}99\,\Delta t_f^{II} + 3{,}04\,\Delta t_f^{I}; \qquad (18)$$

$$\frac{d\Delta t_f^{III}}{d\tau} = 1{,}48\,\Delta t_u^{III} - 5{,}67\,\Delta t_f^{III} + 3{,}33\,\Delta t_f^{II} - 0{,}015\,\Delta t_f^{III}\,\Delta t_u^{III}. \qquad (19),$$

where Δt_u denotes the deviation of the mean uranium temperature in the cross section of the core in question from a nominal value; Δt_f the deviation of the mean coolant temperature in a certain section (the active zone is divided into several sections with respect to height: I, II, III, IV). It is assumed that the heat removal is concentrated in the layer having radius r_z, and that the fuel mass will produce an additional thermal resistance. Eqs. (1) - (19) have been investigated with the help of a re-

Investigation of the automatic ...

actor simulator considering 6 groups of delayed neutrons and with three simulating devices of type MH-7 (MN-7) for work control of reactors. The set of equations is schematically shown in Fig. 3. The following results have been obtained by a study of the automatic controller and reactor for non-steady operation: 1) Representation in one-group approximation results in an excessively high maximum reactivity jump permissible; therefore, 6 groups have been taken. 2) For a discontinuously changing reactivity, the increase of the amplification factor of the automatic controller will first decrease the power excess but will also increase the control time. Increasing the amplification factor by a factor of three will keep the system stable. 3) When the temperature effect ($\varrho_t = 0$) was not taken into account, one obtains $\Delta k_{perm} = 0.000472$ and a linear dependence of the permissible reactivity jump of ϱ_{temp}: $\delta \Delta k_{perm}/\delta \varrho_{temp} = 1.45$. 4) The maximum permissible amplitudes of reactivity pulsation in the range of 0.05 - 0.3 cps, which can be applied to the automatic controller, are given as: $\Delta k = 0.0002$ at $\varrho_t = 0$ and $\Delta k = 0.000325$ at $\varrho_t = -0.67 \cdot 10^{-4}$. Therefore, the temperature effect has to be determined accurately.

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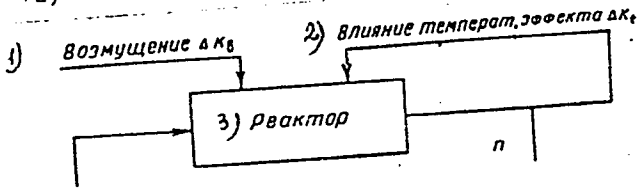
Investigation of the automatic ...

5) Even at resonance frequencies the automatic controller is able to take the pulsation of the coolant amount, and the amplitudes of the corresponding stabilized power fluctuations will be smaller than the permissible maximum. A. K. Krasin, Academician of the AS BSSR, is thanked for interest in this work. There are 5 figures and 2 Soviet-bloc references.

SUBMITTED: April 8, 1961

Fig. 1: Block diagram of the chief components of the automatic control system.

Legend: 1) perturbation; 2) influence of the temperature effect; 3) reactor; 4) control rods; 5) neutron detector; 6) power transmitter; 7) signal amplifier; 8) intermediate switch mechanism; 9) comparator; 10) drive; 11) magnetic amplifier; 12) switch mechanism.



Card 7/11

23736
S/089/61/010/006/001/011
B102/B212

21.1330

AUTHORS: Grishanin, Ye. I., Ivanov, B. G., Sharapov, V. N.

TITLE: A method of partial fuel reloading in nuclear reactors

PERIODICAL: Atomnaya energiya, v. 10, no. 6, 1961, 565 - 571

TEXT: The present paper deals with a theoretical investigation of the partial fuel reloading on the burn up depth of uranium in the fuel channel of a reactor. In this fuel reloading method the fuel is gradually reloaded according to the burn up in order to keep the reactivity excess to a minimum. The highest burn up depth in the fuel channel is obtained with a continuous fuel reloading, this case was already discussed by B. L. Ioffe and L. B. Okun' ("Atomnaya energiya", no. 4, 80 (1956)). In general a fuel reloading will require the shut down of the whole reactor (with the exception of the Calder-Hall reactors). The method of the partial periodic fuel reloading has been tested for the first time (1956) with the reactor of the first nuclear power station in the USSR (Atomnaya energiya" II, no. 2, 109, (1957)). The Russian S. M. Feynberg talked about the theory of this method at the 2nd Geneva Atomic Conference,

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1958; (number of the lecture not given). At first the theory itself is outlined. Later on, it is investigated what part of the fuel has to be reloaded periodically (optimum amount of fuel to be exchanged) in order to keep the costs P of the electric energy to a minimum. From the condition that P shall be a minimum, the optimum amount is calculated with the help of formula (15): $P = \frac{1}{E}\left[(c_1+c_2t_o)N+c_2t_1(\frac{1}{\eta}-q)+c_2t_2q+\frac{c_2T_k}{b}\right]$, where c_1 denotes the difference in costs between virgin fuel and the fuel removed from the reactor; c_2 the consumption (per day); T_k the mean length of operation of a fuel channel (in effective days) during which the power station has generated E kwh of electric energy; b the load coefficient of the station; t_o the time required to reload a fuel channel; t_1 the total time of the shut down and the starting up of the reactor; t_2 the down time of the power station for scheduled preventive maintenance and q the number of such shut downs during a time T_k; η the reloading factor equal n/N (from a total of N fuel channels n will be reloaded). The optimum

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A method of partial fuel reloading ...

η value is obtained from the condition: $dP/d\eta = 0$ $\eta_{opt} = \sqrt{t_1/(\frac{c_0}{c_2} + t_0)N} \sim \sqrt{c_2/c_0}$, since $t_0 \ll c_0/c_2$. If $c_0 \to 0$, according to (15) P will be a minimum if $\eta = 1$. These expressions are valid for an infinite lattice of fuel channels if the regeneration is taken into account. Numerical calculations have been done for the first nuclear power station ($\eta_{opt} = 0.077$) and for the Beloyarskaya atomnaya elektrostantsiya im. I. V. Kurchatova (Beloyarsk nuclear power station imeni I. V. Kurchatov). Fig. 5 shows $P(\eta)$ for various values of c_0/c_2 (c_0 denotes the price of new fuel elements) and Fig. 6 shows $P(\eta)$ with regeneration (curve 1) and without regeneration (curve 2). Concluding it is found that: 1) Partial periodic fuel reloading will increase the burn up depth without increasing the initial reloading; 2) this type of operation requires less shim rods; 3) the uniformity of the energy release will be improved; 4) consideration of the regeneration will shift the optimum η- value toward higher values. The authors thank A. K. Krasin for interest, O.D. Kazachkovskiy and M. Ye. Minashin for suggestions and advice. There are 6 figures and

S/089/61/010/006/001/011
B102/B212

A method of partial fuel reloading ...

7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: S. Lewis, B. Eng. J. Brit. Nucl. Energy Conf., 4, no. 3, 184 (1959).

SUBMITTED: September 7, 1960

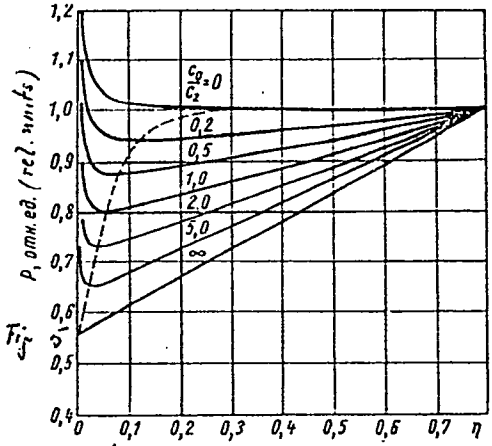

Fig. 5

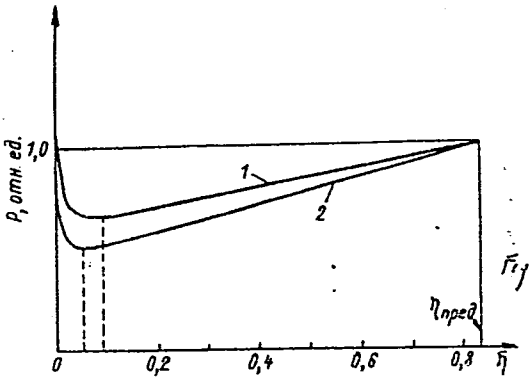

Fig. 6

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SHARAPOV, V. N.

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25372
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B102/B214

21.1000

AUTHORS: Glazkov, Yu. Yu., Gerasseva, L. A., Dubovskiy, B. G., Krasin, A. K., Kisil', I. M., Kuznetsov, F. M., Serebrennikov, Yu. M., Sheiud'ko, V. P., Sharapov, V. N., Pen Fan

TITLE: Investigation of the physical characteristics of the lattice of a uranium - graphite reactor by means of a subcritical insert

PERIODICAL: Atomnaya energiya, v. 11, no. 1, 1961, 5-11

TEXT: This paper gives a description of the experiments carried out since the beginning of 1956 to investigate the physical characteristics of the lattice of a uranium-graphite reactor by means of a subcritical insert. A quadratic lattice (period 200 mm) was studied; the graphite block was 2.2m high and had a diameter of 1 m; its holes had diameters of 44 or 75 mm depending on the uranium rods used. Above and below were reflectors, 60 cm thick; the dimensions of the side-reflector could be varied according to the composition of the core. The inner and the outer parts of the core

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Investigation of the . .

were different: The inner part had always rods of 2%-enriched uranium, and the outer one the subcritical insert as a part of the lattice of the reactor studied. The rods of the natural as well as the 2%-enriched uranium were 1 m long. To measure the lattice parameters of a reactor of the type Beloyarskaya GRES (Beloyarsk State Regional Electric Power Plant) ring-shaped sections (1 m long) of the fuel element (up to 1.2 % enriched uranium) simulating the real elements were built in the subcritical insert. Each fuel element channel contained six such elements arranged round a central tube. The reactor of the GRES also had vaporization and steam-superheating channels; these were simulated by having the central tube filled with water for the former, and having it without water for the latter. The characteristics of the systems studied were as follows:

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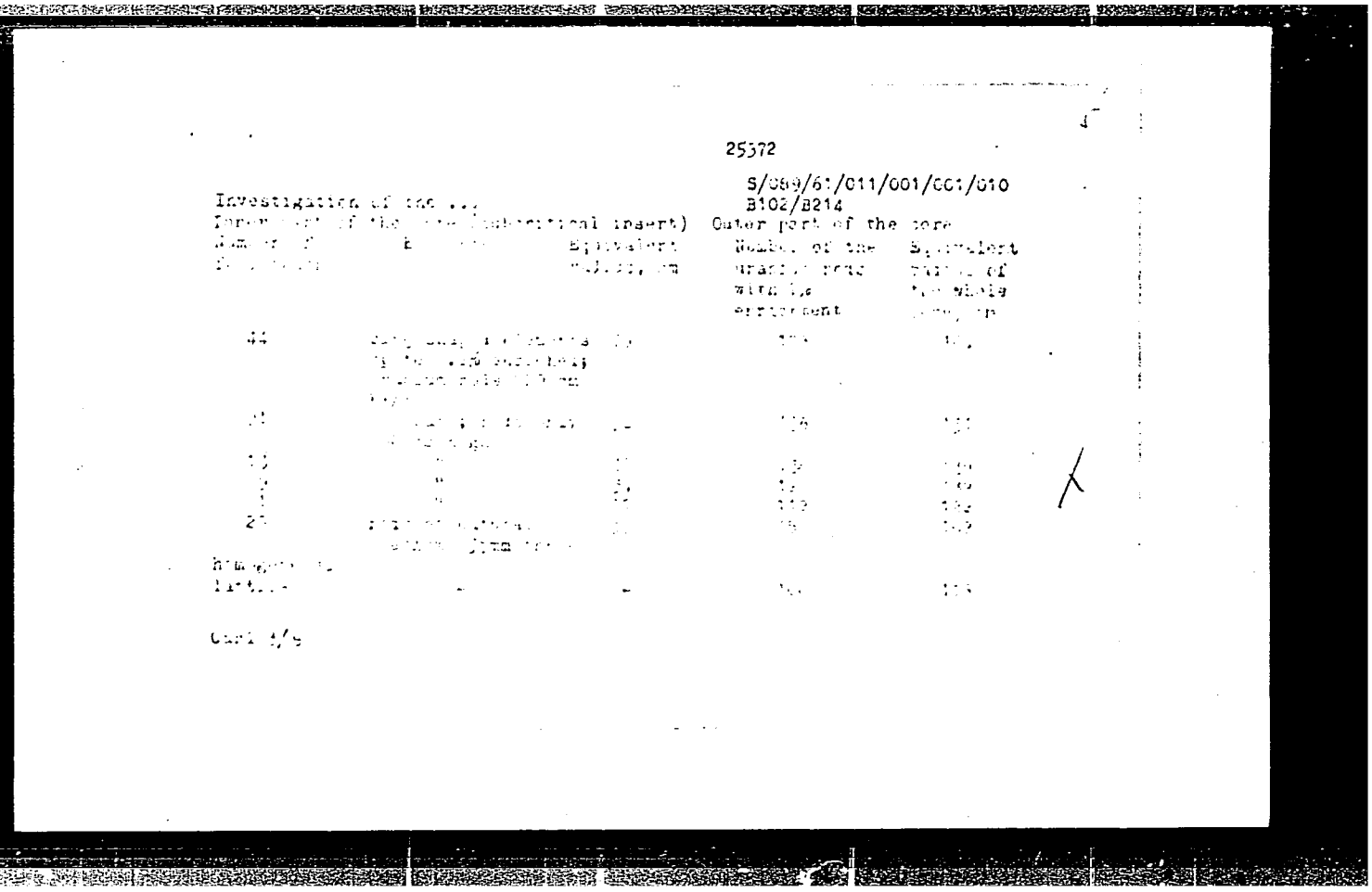

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B102/B214

Investigation of the ...
Inner part of the ... (cylindrical insert)

...	...	Equivalent ...	Outer part of the core: Number of the ...	Equivalent ...
44	...	...	...	...
21	...	...	...	...
13	...	...	...	...
7	"	...	...	...
1	"	...	...	...
25	...	...	...	...
...	...	...	...	...

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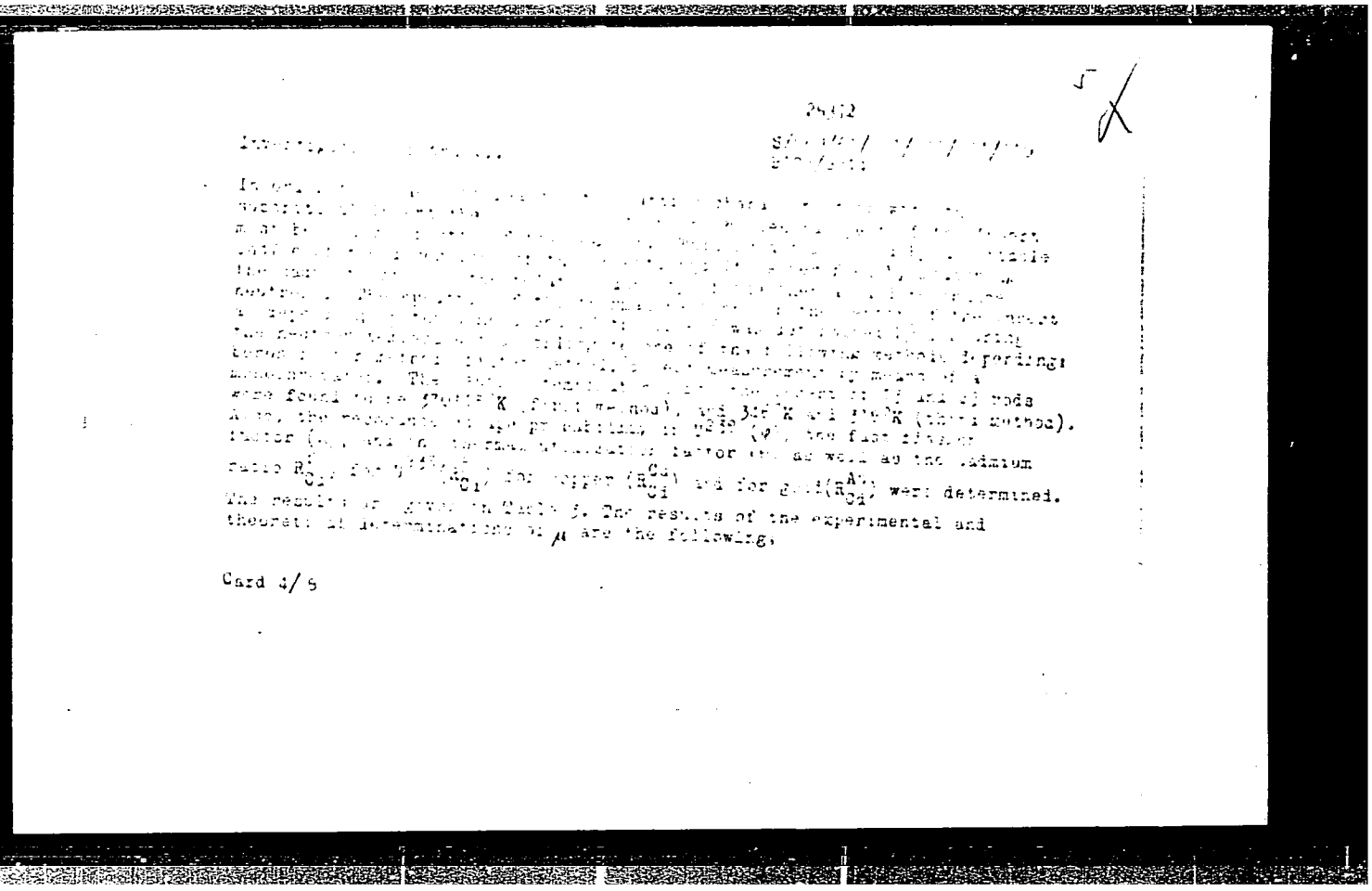

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Investigation of the ...

Position of the channel	Value of μ experimental	theoretical
Central channel of an insert of 21 channels with water	1.040±0.006	1.033
One channel with water in the center of a thermal graphite column of 70 cm diameter	1.036±0.005	1.030
Central channel of an insert of 21 channels without water	1.042±0.006	1.035

Q for the GRES type reactor was found to be 0.64 (for channel with water) and 0.65 (without water). It was found that, in order to adjust the neutron spectrum in the center of the subcritical insert so that it is characteristic of the given uranium - graphite lattice, it is necessary so to choose the dimensions of the insert so that its equivalent radius is $\sim 3(\sqrt{\tau}+L^2)$ cm ($\sqrt{\tau}$ is the slowing down length in the moderator and L the diffusion length). To measure μ it is sufficient to arrange one cell of the lattice under study in the center of the reactor with 2% enriched uranium. The authors thank Ye. F. Makarov, G. M. Vladykov, G. I. Sidorov,

Card 5/8

Investigation of the ...

V. N. Fofanov, V. V. Vavilov, V. A. Semenov, A. N. Galanin, M. V. Bakhtina, M. K. Timonina, A. T. Anfilatov, Yu. S. Ziryukin, Yu. I. Starykh and A. P. Dolgolenko for collaboration; and A. V. Kamayev, M. Ye. Minashin, G. Ya. Rumyantsev and I. G. Morozov for their interest and discussions. There are 3 figures, 4 tables, and 12 references: 8 Soviet-bloc and 4 non-Soviet-bloc. The three references to English-language publications read as follows: M. Kuche. Nucl. Sci. Engng. 2, No. 1, 96 (1957); D. Klein et al. Nucl. Sci. Engng. 3, No. 4, 403 (1958); J. Volpe et al. Nucl. Sci. Engng. 5, No. 6, 360 (1959).

SUBMITTED: December 12, 1960

Legend to Table 3: 1) number of the cells in the insert, 2) homogeneous lattice, 3) construction of the elements and enrichment of the uranium, 4) ring-shaped elements with water, 1.2%, 5) idem, 6) the same without water, 7) 35 cm thick rods of natural uranium, 8) 35 mm thick rods of 2% enriched uranium, 9) experimental, 10) calculated, 11) in the fuel element (according to fragment accumulation), 12) in the graphite of the central cell, 13) in the fuel element. *calculated according to V.V. Orlov; **in agreement with the measurements of M.B. Yegiazarov.

Card ~~5/8~~

ACCESSION NR: AP4006629 S/0089/63/015/006/0481/0485

AUTHORS: Glaskov, Yu. Yu.; Dubovskiy, B. G.; Ilyasova, G. A.; Kozlov, V. I.; Smelov, V. V.; Sharapov, V. N.

TITLE: Measuring slow-neutron spectra on a physical stand of the reactor at the Beloyarsk State Regional Power Plant imeni I. V. Kurchatov

SOURCE: Atomnaya energiya, v. 15, no. 6, 1963, 481-485

TOPIC TAGS: slow neutron, slow neutron spectrum, neutron flux distribution, neutron spectrum, neutron flux, energy spectrum, time of flight method

ABSTRACT: The flight time method has been used to measure the energy spectra of slow neutrons on the boundary between cells and on a hot channel surface. The lattice of the subcritical flacility in which the measurements have been made is similar to the reactor lattice of the Beloyarsk atomic power plant. The facility under study, measuring 100 x 100 x 100 cm, was placed in the center of the stand-type uranium graphite reactor core. Channels containing 2%-

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ACCESSION NR: AP4006629

enriched uranium were placed along the core perimeter, and the facility was filled with channels containing 1.2%-enriched uranium. The measurements were made for two different facilities, with and without water, in the central tubes and heat-releasing elements of the hot channels, and the spectra were measured by a mechanical selector. The time separation of the impulses took place in 128-channel analyzer, with each channel measuring 32 microseconds in width. A chamber made of stainless steel 1X18H9T and filled with He^3 to a pressure of 18 Atms was used as a neutron detector. The energy distribution of the neutron flux found by processing the experimental data are shown in the enclosure, Fig. 3. The experimental spectra were compared with the rated spectra on the outer boundary of the cell and the spectra on the boundary between the graphite and uranium zones. The rated values were "cross linked" with the experimental ones in the moderation region on the boundary between the cells. The comparison thus included both the energy and spatial distribution, and the results appear to agree with the experimental data.

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ACCESSION NR: AP4006629

"The authors express their gratitude to L. A. Matalin for the development and construction of the time analyzer, to P. S. Klemashev for designing the mechanical interrupter, and to V. V. Orlov and A. G. Novikov for their useful comments."
Orig. art. has: 3 Figures and 3 Formulas

SUBMITTED: 27Apr63 DATE ACQ: 07Jan64 ENCL: 02

SUB CODE: NS NR REF SOV: 005 OTHER: 002

ASSOCIATION: none

Card 3/3

SHARAPOV, V.V., gornyy inzh.

Hydraulic coal mining is one of the most important means of carrying out the tasks set for the coal industry in the current seven-year period. Ugol' 34 no.3:23-29 Mr '59. (MIRA 12:5)

(Coal mines and mining)
(Hydraulic mining)

SHARAPOV, Ya.N., inzhener.

Mazut dehydration. Stal' 7 no.2:170 '47. (MLRA 9:1)

1.Voroshilovgradskiy parovozostroitel'nyy zavod.
(Mazut)

SHARAPOV, Ye.G.

First industrial testing of set gill nets made from lavsan and anid in the Sea of Azov. Trudy Azcherniro no.21:15-18 '63. (MIRA 17:8)

SHARAPOV, Ye.P.

Compensation of decarburization in precision-cast steel. Lit. proizv. no.6:38 Je '62. (MIRA 15:6)
(Precision casting)

SHARAPOV, Yu. ..., kandidat istoricheskikh nauk.

Academician Markov makes a decision. Znan. sila 32 no.3:15-16 Mr '57.
(Markov, Andrei Andreevich, 1856-1922) (MLRA 10:6)

[redacted], N. V., [redacted] Yu. I. and [redacted], Ya. I.

"The Achievements in the Field of Quick, Reliable, Economical and Small Computer Elements."

report presented at the Conference on Automation and Computation Engineering Moscow, 5-8 March 1957. Organized by All Sci. Eng. and Tech. Society for Apparatus Building.

06365
SOV/142-2-4-18/26

9 (2)

AUTHORS: Lyubovich, L.A., Kutukov, L.V., Sharapov, Yu.I.

TITLE: Remarks

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 2, Nr 4, pp 492-493 (USSR)

ABSTRACT: The authors express their opinion on the article by T.M. Agakhanyan, B.N. Kononov, I.P. Stepanenko, titled "The Terminology in the Field of Transistor Electronics", published in Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1958, Nr 4, Vol 1, p 496. In several cases they do not agree with the suggested list of terms. The designation p-n-p and n-p-n should be used for classifying transistors instead of "dyrochnyye" (hole-type) or "elektronnyye" (electron-type) "tranzistory" (transistors). The latter term should not be used for designation semiconductor diodes. The term "tyanutyy" (drawn) for a crystal is not proper, since a crystal is grown. Concerning diodes, the authors wish that the terms "anod" (anode) and "katod" (cathode) be

Card 1/2

Remarks

used instead of "emitter" (emitter) and "baza" (base). Diodes should not be classified as "vypryamitel'nyy" (rectifier) and "detektornyy" (detector) diodes. The term "ploskostnyy" (junction) in connection with a transistor should not be replaced by different designation (surface barrier, p-n-p, etc), since the number of modifications is increasing annually. Further, the authors recommend some changes in the selection of symbols for designating transistor parameters.

ASSOCIATION: Institut tochnoy mekhaniki i vychislitel'noy tekhniki AN USSR (Institute of Precision Mechanics and Computer Engineering of the AS UkrSSR)

SUBMITTED: February 28, 1959

SHAKAFOV, Yu.I.; SADIKOV, L.A., red.

[Elements and networks of electronic digital computers] Elementy i uzly elektronnykh tsifrovykh vychislitel'nykh mashin. Moskva, TsNIIPI, 1964. 38 p. (MIRA 18:3)

SHARAPOV, Yu.V.

Fifteenth final session on welding held in Leningrad. Avtom. svar. 17 no.7:93-94 Jl '64. (MIRA 17:8)

L 61843-65 EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4
JD/HM

ACCESSION NR: AP5016017 UR/0125/65/000/006/0032/0037 41
621.791.756:536.4 40 B

AUTHOR: Sharapov, Yu. V. (Engineer)

TITLE: Temperature fields during electroslag welding of thick-walled structures

SOURCE: Avtomaticheskaya svarka, no. 6, 1965, 32-37

TOPIC TAGS: heat conductivity, electroslag welding, steel, temperature measurement, mathematical method

ABSTRACT: Approximate calculations based on a scheme of three linear sources were made for the thermal cycle of the heat-affected zone in electroslag welding. Experiments were conducted on low-carbon steels with thicknesses ranging from 160 to 650 mm, which were electroslag welded on the automatic A-645 machine. The results and calculations for the thermal cycles are graphically presented. The calculations were based on the formula of N. N. Rykalin for a single heat source

$$T(r,x) = \frac{q_1}{2\pi\lambda}\exp\left(-\frac{Vx}{2a}\right)K_0\left(r\sqrt{\frac{V^2}{4a^2}+\frac{b}{a}}\right)$$

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L 61843-65

ACCESSION NR: AP5016017

where T is temperature; q is mobility of the linear heat source, cal/cm-sec; r is surface radius-vector element of the mobile field, cm; $K_0(U)$ is the Bessel function of the imaginary argument of the second series of zero order; a is the coefficient of heat conductivity, cm^2/sec; and b is the coefficient of heat receptivity, $1/sec$. This formula is extended to three linear heat sources and theoretical and experimental data are plotted for temperature as a function of time and distance; the differences between experimental and theoretical temperatures did not exceed 50°C. Tables are given with parameters of the above equation. The effect of boundary heat reflection was considered for plates less than 600 mm, in the direction of heat loss. However, the effect on temperature was found to be slight. Orig. art. has: 6 figures, 2 tables.

ASSOCIATION: Izhorskiy zavod im. A. A. Zhdanova (Izhorsk Plant)

SUBMITTED: 27Apr64 ENCL: 00 SUB CODE: MM, TD

NO REF SOV: 009 OTHER: 000

Card 2/2

L 9676-66 EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) JD/HM

ACC NR: AP5027607 SOURCE CODE: UR/0135/65/000/011/0037/0037

AUTHOR: Sharapov, Yu. V. (Engineer)

ORG: Izhorsk Plant (Izhorskiy zavod im. A. A. Zhdanova)

TITLE: Electroslag welding of connecting pipe to thick-walled shells of 15Kh2MF pearlitic steel

SOURCE: Svarochnoye proizvodstvo, no. 11, 1965, 37

TOPIC TAGS: shell structure, electroslag welding, welding equipment component, electric transformer, pipe

ABSTRACT: The author presents the results of experiments with the mechanized welding electroslag of connecting pipe (outside diameter 650 mm) to thick-walled 2,000 mm diameter shells of 15Kh2MF pearlitic steel, performed with the aid of special electrode-feed mechanisms, on using a TShS-3500-3 three-phase transformer as the power source. Two variants of welding were tested: with flat projection on the shell and flat butt end of the connecting pipe (Fig. 1, b) and with cylindrical surfaces of shell projection and pipe butt end (Fig. 1, c). The second variant turned out to be preferable, since it allows some reduction in the shell's forging tolerances and volumeof cold working. The assembly is heated during its welding, since this helps to prevent cold cracking, and, after welding, subjected to high-temperature tempering

Card 1/3 UDC: 621.791.793:669.15-194

L 9676-66

ACC NR: AP5027607

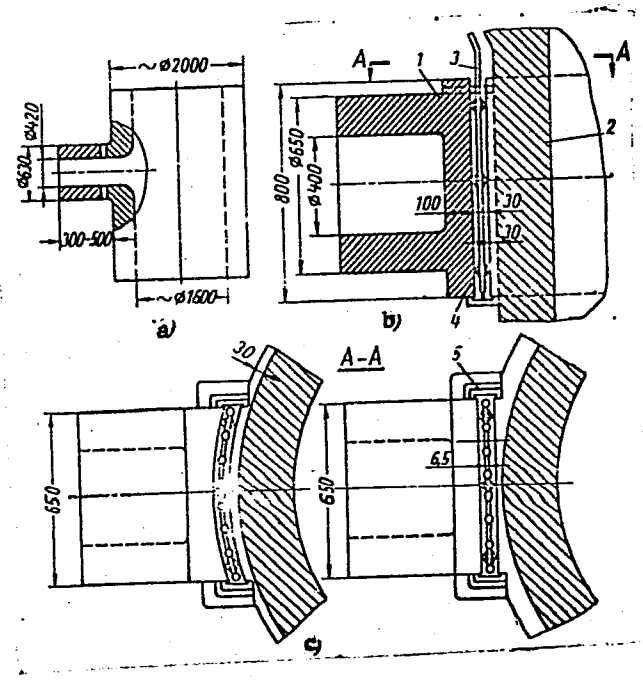

Fig. 1. Weldment with connecting pipe (a) and variants of welding of connecting pipe to shell (b, c) :
1 - connecting pipe;
2 - shell; 3 - consumable welding tip; 4 - insulator;
5 - backing strip

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